

Volume 13, Number 2 • March-April 1984

# ZOOKEEPER

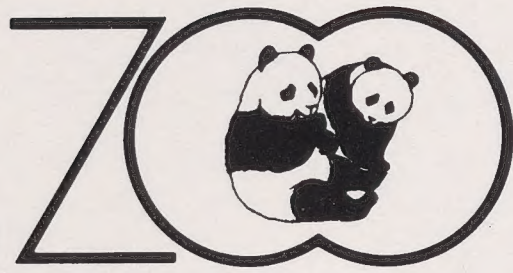
\$2





# ZOOGOER

## Friends of the National



is a nonprofit organization of individuals and families who are interested in supporting Zoo programs in education, research, and conservation.

As members of FONZ, you and your family receive many benefits—publications, discount privileges, and invitations to special programs and activities to make your zoogoing more enjoyable and educational.

*ZooGoer* (ISSN 06313-416X) is published six times a year by Friends of the National Zoo, National Zoological Park, Washington, D.C. 20008. Third class mailing permit no. 44282.

Subscription as percentage of full membership dues is \$5.00 a year. Subscription-only membership is \$5.00 a year and is available only to institutions and to those residing outside the Washington, D.C., area.

Copyright © 1984, Friends of the National Zoo. All rights reserved.

### ZooGoer Staff

*Editor:* Bettina Conner; *Consulting Editors:* Dr. Robert Hoage, Mary Massey, Sabin Robbins, Fran Bernstein, Donna Schlegel; *Design:* Roy Teller.

### Cover

*A male bluebird watches over his nestlings. The eastern bluebird has begun to make a comeback, with the help of thousands of people throughout the mid-Atlantic region. These conservation efforts—including the Zoo's own bluebird project—are chronicled on page 4. Front cover photo by wildlife photographer Michael L. Smith. Back cover photo by Eliot Elisofon, National Museum of African Art, Eliot Elisofon Archives, Smithsonian Institution.*

### FONZ Board of Directors, 1983-84

Robert L. Nelson, *President*; Capt. Victor Delano, *First Vice President*; William C. Bryant, *Second Vice President*; Janice A. Booker, *Treasurer*; Sally S. Tongren, *Secretary*; Knox Banner; Josephine T. Burman; John A. Cutler; Janet Dewart; George A. Didden, III; Marguerite P. Foster; Alphons Hackl; Anne Webster Hamilton; Dr. A. Jose Jones; John P. Manton, Jr.; Georgianna S. McGuire; Robert W. Mason; Dr. Roscoe M. Moore, Jr.; Monica J. Morgan; Ine N. Noe; Terry R. Peel; James F. Rogers; Sylvia L. Samenow; Nancy M. Schneck; Ross B. Simons; Kenneth R. Sparks.

### FONZ Staff

Sabin Robbins, *Executive Director*; Dennis Baker, *Associate Director*; Donna M. Schlegel, *Volunteer and Educational Services*; Fran Bernstein, *Membership*; Bettina Conner, *Publications*; Merva Crawford, *Merchandising*; James Mustakas, *Food Service*; Norma Grubbs, *Business Manager*; Mary Massey, *Personnel Manager*; Cary Burgess, *Parking*.

### National Zoological Park Staff

Dr. Christen Wemmer, *Director (Acting)*; Dr. Devra Kleiman, *Assistant Director for Animal Programs (Acting)*; Gaetano Calise, *Assistant Director for Support Services*; Dr. Theodore H. Reed, *Senior Advisor*; Vincent J. Doyle, *Office of Management Services*; Jaren Horsley, *Special Assistant to the Director for Programs*; Ric Hider, *Staff Horticulturist*.

### Department Heads

Dr. Edwin Gould, *Mammalogy*; Dr. Eugene Morton, *Ornithology*; Dr. Dale Marcellini, *Herpetology*; Judy White, *Education*; Dr. Robert Hoage, *Public Affairs*; Dr. Mitchell Bush, *Animal Health*; Dr. Richard Montali, *Pathology*; Miles Roberts, *Zoological Research (Acting)*; Larry Collins, *Conservation and Research Center (Acting)*; Donald Muddiman, *Construction Management*; Emanuel Petrella, *Facilities Management*; Robert Mulcahy, *Graphics and Exhibits*; Samuel Middleton, *Police and Safety*.

## Contents

**Conservation in Nepal** 3  
by Dr. Christen Wemmer

**The Eastern Bluebird** 4  
by Eugenia Snyder  
A conservation success story.

**The Zoo's Unique Detectives** 10  
by Jonathan White  
Twenty-one people work around the clock in one of the most unusual police jobs in the country.

**Photo Contest Winners** 12

**FONZ News** 17  
A benefit gala with dancing under the stars

**Gustav** 19  
A Monkey House preview



Jessie Cohen

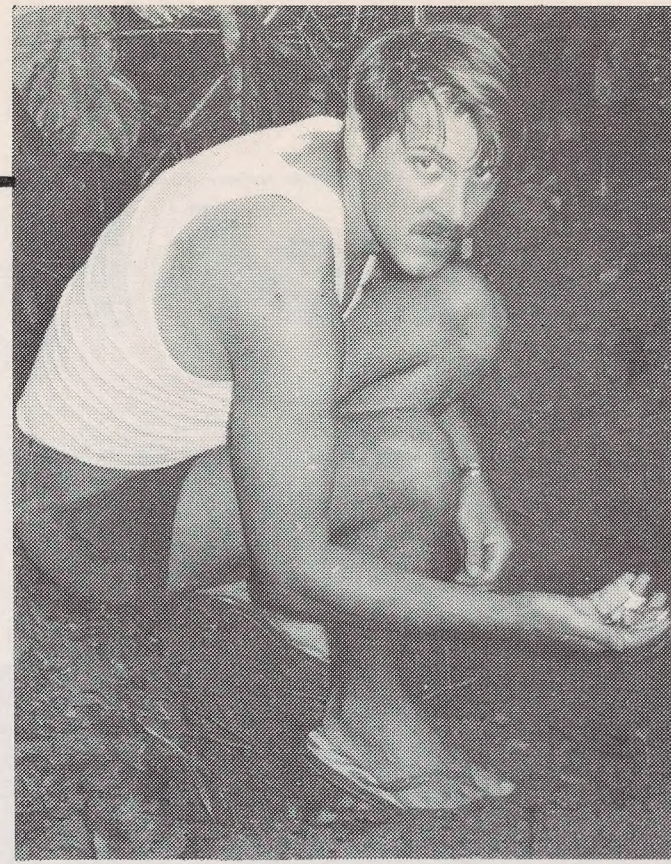
**Panda Playground** 21  
Join the biggest FONZ volunteer project ever!

**Zoo News** 22  
The Zoo gets a new Director, begins the panda watch and exhibits several new animals.

**New ZooGoer Format:** We want to thank all of you who wrote and called to praise *ZooGoer's* new format. The larger size with color photographs is proving both a popular and a cost-effective improvement. Most important, we hope that *ZooGoer's* new format will increase interest in the National Zoo and its conservation goals. We welcome comments on *ZooGoer* articles from readers. Appropriate letters may be published in upcoming issues.



## CONSERVATION IN NEPAL: AN EXCITING PROJECT FONZ MEMBERS CAN VISIT



*Wemmer in Nepal*

Dear FONZ Member,

The National Zoo's research and conservation projects in natural habitats give us a knowledge of animals in the wild that is vital to preserving in our captive animals those traits necessary for survival in the natural setting. Next February, for the first time, FONZ members will be able to visit one of these projects, located in Nepal's Royal Chitawan National Park. [See page 18.]

During the past eight years, the Zoo lent management support to the Smithsonian-Nepal tiger ecology project, on which I have had the privilege to serve as scientific consultant. This very successful program generated vital information for the management of wild tiger populations. It also resulted in the training of an enthusiastic cadre of Nepalese wildlife workers.

When the program ended in 1983, Nepal's King Birenda established the Mahendra Nature Conservation Trust. With the collaboration of three Smithsonian bureaus—the National Zoological Park, the Smithsonian Tropical Research Institute and the National Museum of Natural History—the Trust has initiated a new five-year phase of conservation research and development.

FONZ members who visit this exciting program will also be helping to support it, since proceeds from the Nepal tour will be donated to the Trust for construction of a much-needed field station in the heart of the Park.

The Zoo's participation in the Mahendra Trust is important to our conservation goals as well as to our goal of enlightening the public about the role that animals play in their ecosystems. Let us hope the day will never come when zoo animals are only relics of the past and no longer symbols of a vital wilderness.

Many zoos are aware of this sad prospect, and through programs in cooperative breeding, education and research are contributing to an understanding of the world's splendid diversity of life. Few zoos, however, can sponsor studies of endangered ecosystems and their animals. The National Zoo is exceptional in having a history of involvement in conservation work in the far corners of the world—the last strongholds of wilderness.

Cordially,

Christen M. Wemmer  
Acting Director  
National Zoological Park



# Symbol of Happiness

Eugenia Snyder

*Vast multitudes, rising strata upon strata, covered the darkened sky and hid the sun, while the roar of the myriad of wings might be likened to that of a hurricane; and thus they passed for hours or days together;... where the lower flights passed close over high hilltops, people were stationed with oars, poles, shingles, and other weapons to knock down the swarming birds, and the whole countryside was fed on pigeons until the people were surfeited.*

Such was Edward H. Forbush's description of a massive flight of passenger pigeons in his 1925 book on the birds of New England. He wrote his description of the pigeon in the past tense because the last known member of the species had died 11 years earlier.

Extinction was not a concern of most pre-20th-century Americans. Even the great naturalist John James Audubon shot and collected specimens (often large numbers of a single species) without any apparent concern about the welfare, much less the existence, of most species.

Americans today are not so oblivious. The U.S. Department of Interior lists 593 species of animals in danger of extinction; another 67 species are listed as "threatened." But species appearing on official lists represent only a fraction of the thousands of animals and plants that may actually be threatened.

Among those species that have declined dramatically in recent years is the beloved symbol of

happiness, the eastern bluebird. The bluebird's population has dropped some 90 percent in the last 50 years. The bird that Henry David Thoreau said "carries the sky on its back" has not yet been added to any government lists, though it has been seen by most young people only on greeting cards.

In the early part of this century, eastern bluebirds were almost as common on farms and suburban gardens east of the Rocky Mountains as robins. They endeared themselves to many through their striking blue and rust plumage, their gentle, contemplative song, and their subdued manner. They also were valued by farmers and gardeners because bluebirds eat many of the insects that harm crops and foliage.

The primary cause of the decline of the eastern bluebird has been reduced nesting sites, combined with increased competition for available sites. With few exceptions, bluebirds nest only in cavities or enclosures found in open fields or on the periphery of woods. Ideal natural nesting sites include old woodpecker holes and hollows in dead trees or decaying wooden fenceposts. However, the advent of large single-crop farms, the use of metal fence stakes, the frequent pruning of dead branches and the removal of dead trees eliminated many nesting sites.

The breeding success of the eastern bluebird has also been affect-

ed by the bird's inability to compete with other cavity-nesting species for available sites. To their advantage, bluebirds begin searching for cavities very early in the spring and often occupy sites before migratory species (such as tree swallows and house wrens) return to their breeding grounds and before non-migratory species (such as chickadees and titmice) begin building their nests.

Although bluebirds can compete successfully with species of birds with which they have co-existed and co-evolved for thousands of years, they cannot cope with two "alien" species introduced to this continent by man: the house sparrow and the starling. Both species are exceptionally aggressive, persistent and adaptable, and both are responsible, to a great extent, for the gradual disappearance of the eastern bluebird.

The huge numbers of house sparrows and starlings that appear to thrive equally well in today's urban, suburban and rural environments grew from a small flock of house sparrows imported from Europe in 1851 and 60 starlings released in New York City's Central park in 1890. Because of their adaptability to human-dominated environments, the populations and ranges of both species expanded rapidly. In 50 years, house sparrows spread across the United States, north into Canada and south into Mexico. Starlings soon followed their example.



---

With help from thousands of people—including Zoo scientists—the eastern bluebird is no longer flying the way of the passenger pigeon.

---

Michael L. Smith



*Bluebirds in the Maryland-Virginia area do not migrate south in the winter. These 11 adults keep warm on a winter night by roosting together in a hollow log. The birds at left are all males; at right, females.*





Junius Birchard

Primary school students in Long Valley, N.J., build nestboxes with wood pre-cut by bluebird enthusiast Junius Birchard. "Kids build excellent boxes," Birchard said, "because they make loose seams that allow good ventilation."

Bluebirds cannot compete successfully with these species because neither house sparrows nor starlings migrate, and both prefer to nest in cavities (though they will nest elsewhere). They use woodpecker holes and other cavities as roosts during the winter and already occupy good sites when bluebirds search for nesting cavities in the spring. So both house sparrows and starlings compete directly with bluebirds for nesting sites.

In addition, because they are gregarious and aggressive by nature, house sparrows and starlings are nearly always successful in either winning disputed nesting sites or evicting bluebirds from occupied sites. To acquire an occupied cavity, house sparrows and starlings will puncture or remove a bluebird's eggs, kill nestlings by pecking their heads, or even kill the adults defending a nest. Then they construct their nests over the carcasses.

Other factors contributing to the bluebird's decline include the contamination or elimination of its food and increased competition for remaining food resources. The widespread use of insecticides has reduced or eliminated many types of insects (such as grasshoppers,



Michael L. Smith

*In three or four days, this 15-day-old bluebird will be mature enough to fly. If it is approached too closely at this age, it could fledge prematurely, and its chances for survival would be poor.*



---

Because they are gregarious and aggressive by nature, house sparrows and starlings are nearly always successful in either winning disputed nesting sites or evicting bluebirds from occupied sites.

---

spiders, crickets, caterpillars, cutworms and locusts) normally consumed by bluebirds during the spring and summer. Insecticides may also directly affect nestlings and adult birds that eat contaminated insects. The long-term effects of sub-lethal dosages during the breeding season are not fully understood, but it is clear that the use of pesticides will hasten the disappearance of the bluebird.

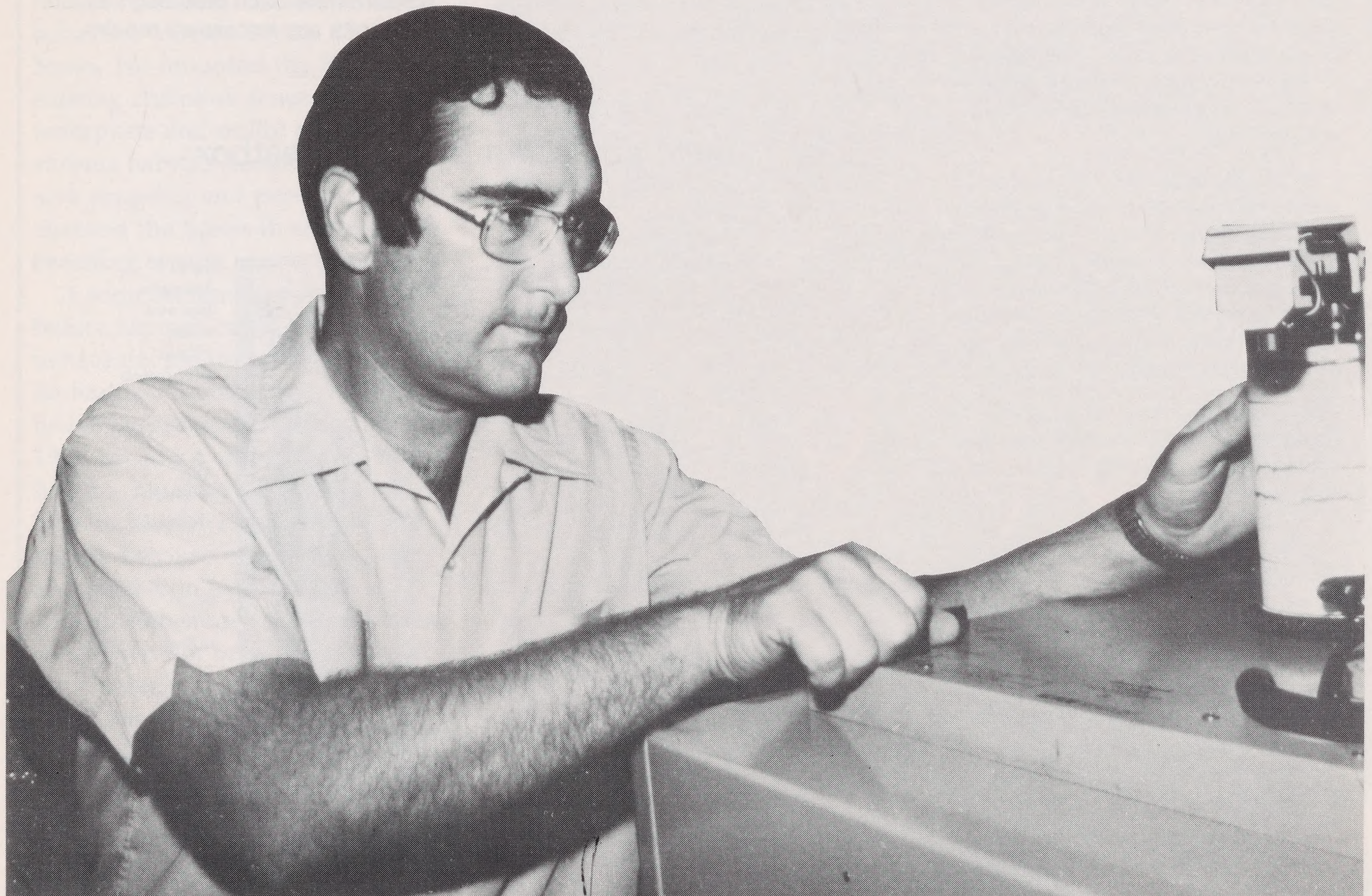
Unlike many other insect-eating birds, bluebirds in Virginia and

Maryland are not migratory. Rather than migrate to areas where insects are available during the winter, they shift their diet each fall to fruits such as bittersweet, dogwood, black gum, holly, bayberry and sumac. They forage in small family flocks and move between local concentrations of fruit.

Eastern bluebirds breed in all states east of the Rocky Mountains and winter in the lower two-thirds of the breeding range. Severe winter weather in the South always

reduces bluebird populations. Thousands of birds perish when temperatures drop below freezing and fruit is covered by ice for several days.

While little, if anything, can be done to curb the burgeoning populations of starlings and house sparrows, it is possible to help bluebirds. Studies have shown that bluebirds become significantly more abundant in areas where nestboxes are erected in suitable habitat.



Jessie Cohen, N.Z.P. Office of Graphics and Exhibits

*Zoo ornithologist Eugene Morton began studying bluebirds at Front Royal, Va., in 1974.*



# Bluebird Nestboxes and Trails

Perhaps the first person to play an active role in bluebird conservation was Dr. Thomas E. Musselman, a businessman and college professor in Quincy, Ill. In 1926, Musselman designed a nestbox specifically for bluebirds, put a few up in suitable habitat and monitored the boxes—or “bluebird trail”—to keep them free of house sparrows and starlings. Bluebirds took to the boxes readily and bred successfully.

The nestbox below is based on Musselman's design. In addition, here are some tips to help you get started, whether you are building a trail or a single nestbox in your backyard:

- In the Maryland-Virginia area, bluebirds begin searching for nesting sites in March. Boxes put up in late spring or summer may be occupied that year, but they will more likely be used the following year. Bluebirds may also use nestboxes as roosts during winter and early spring, then as nest sites in spring and summer.

- Bluebirds prefer rural, open areas with scattered trees and low or sparse ground cover. They will also nest in an open field near woods, but not in or within close range of woods. Pasture, golf courses, large lawns and rural cemeteries provide good habitat for bluebirds.

- Place the boxes at least 80 yards apart unless the box sites are separated by houses or patches of woods.

- Mount the boxes four to six feet from the ground on narrow but sturdy poles or pipes; this will help reduce invasion by climbing predators. (Information on a variety of additional ways to protect bluebird boxes from predators is available from the North American Bluebird Society, Box 6295, Silver Spring, Md. 20906.)

- Face nestbox openings away from the direction of prevailing winds and, if possible, toward a

nearby tree. This will reduce the rain that could blow into the box and ensure that the fledglings will have a safe place to fly to when they leave the box.

- If possible, monitor the boxes once a week during the nesting season (April to mid-August in Maryland and Virginia). Removing the lid long enough to look at the box's contents will not usually disturb the birds' nesting activities. In fact, female bluebirds will occasionally remain on their nests after the lid has been removed. However, you should not approach a nestbox after the young are 12-13 days old, since this may cause them to fledge prematurely. Young that leave the box before they are mature enough to fly (18-19 days old) are not likely to survive.

- Although chickadees and tree swallows compete with bluebirds for

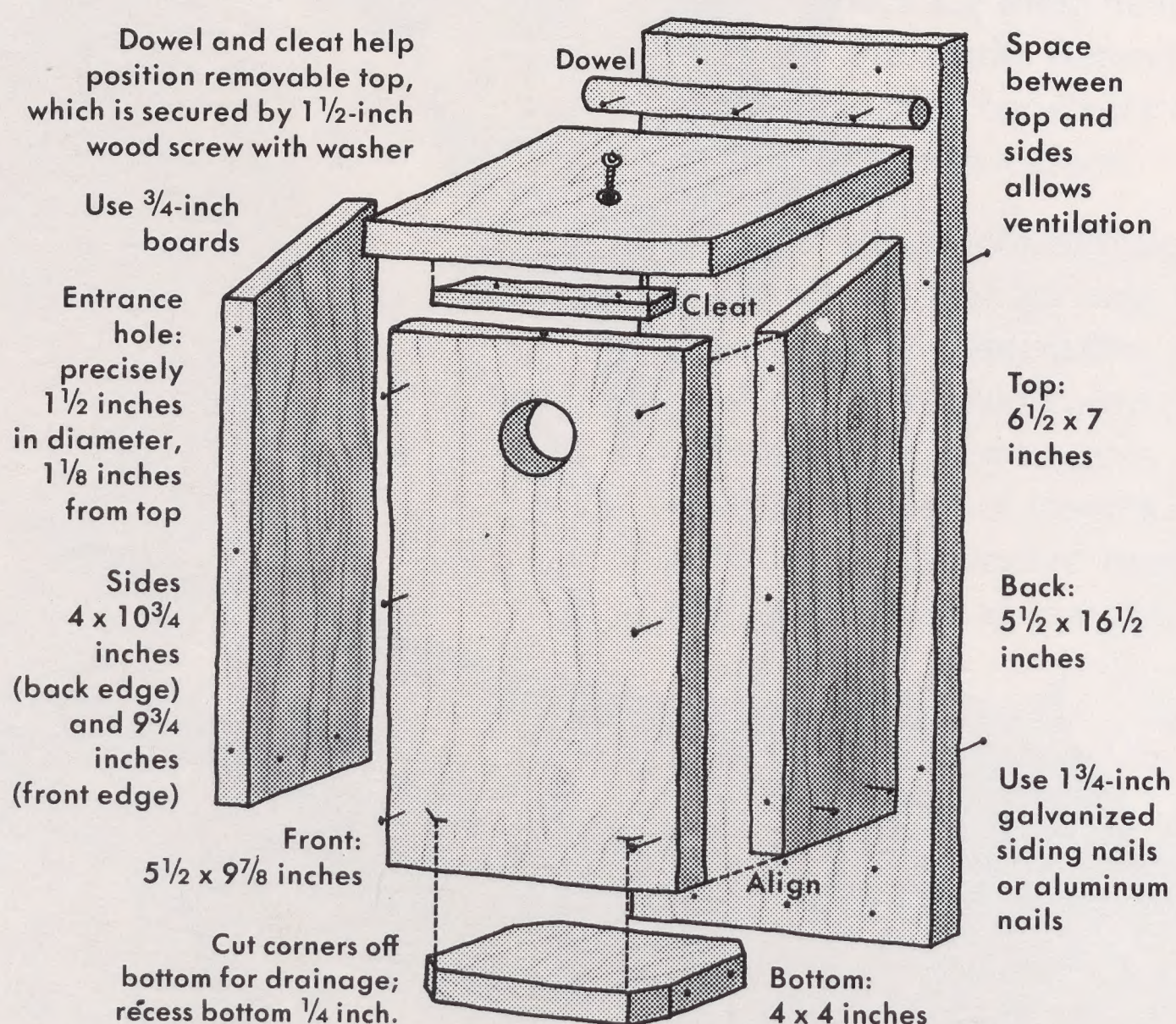
nesting sites, they are desirable birds and should be allowed to take up residence in your boxes. In contrast, you should remove the nests of house sparrows from your boxes. The use of 1½-inch entrance holes will prevent starlings from entering your boxes.

- The exteriors of boxes should be painted with light colored exterior latex paint to increase the boxes' longevity, keep nests dryer and prevent overheating of the eggs and young.

- Bluebirds have two or three broods (sets of young) each breeding season. To encourage bluebirds to occupy the same boxes over and over again, remove old nests as soon as the young have left.

- Clean out and inspect your boxes before each breeding season and make any necessary repairs.

## Build Your Own Bluebird Nestbox



© 1977 NATIONAL GEOGRAPHIC SOCIETY



# The Zoo's Front Royal Bluebird Project

One important bluebird study was conducted at the National Zoo's Conservation and Research Center in Front Royal, Va. When Dr. Eugene Morton, an ornithologist on the Zoo's research staff, visited the Center in 1974, he discovered a small resident population of bluebirds. To study their behavior, Morton set up 35 nest-boxes. He mounted the boxes on existing chainlink fences, wooden fenceposts and utility poles in various habitats around the 3100-acre property and periodically checked the boxes throughout the breeding season.

It soon became apparent that before Morton could begin any behavioral studies of the bluebirds, he had to reduce invasion of the boxes by predators. During the 1976 breeding season, more than half the bluebird eggs and nestlings in Morton's boxes were lost—mostly because of severe weather and predation by raccoons and snakes. (Starlings and house sparrows have not been a problem at the Center.)

*(Continued on page 15)*

*Eugenia Snyder monitors a bluebird box at the Zoo's Conservation and Research Center (above). A female bluebird feeds meal worms to her brood (right).*

NZP Archives



Michael L. Smith





# The Zoo's Unique Detectives

Jonathan White

The 21 men and women on the National Zoo's Police Force have one of the most unusual police jobs in the country—working in a 168-acre city-within-a-city where the residents are all animals.

This year, Zoo Police will direct the traffic and parking of 200,000 vehicles, assist over three million

visitors with problems ranging from lost children to keys locked inside cars, and try to locate the owners of thousands of dollars of property found on the Zoo grounds.

"Handling lost property is an important responsibility," said Police and Safety Director Samuel

Middleton. Zoo officers often use their detecting skills to locate owners of lost items ranging from coats and sweaters to wallets and jewelry. Eight years ago a zoogoer lost his college class ring in a pile of leaves; he never reported the loss. The ring was found, but no one claimed it. Last year, Zoo



Tom Sullivan

*Zoo Police are frequently called on to help visitors locate lost articles.*



Police were finally able to identify the owner through his initials on the ring, his college and graduation year.

"We located the owner's wife," said Capt. George Day, "and she subsequently surprised her husband by giving the ring to him as one of his Christmas presents that year."

After a recent school visit to the Zoo, a teacher telephoned Pvt. R.B. Jones to report that one of the children had thrown away a lunch bag containing an expensive dental retainer. Jones contacted Kershaw Frager of the Zoo maintenance staff, who, amazingly, located the retainer amid a large truckload of trash.

Providing information to visitors is another important function of Zoo Police officers. They are often asked about animal feeding times or locations of exhibits—especially the Panda House.

Zoo Police are on duty 24 hours a day. Evening patrols check the Park grounds before they lock the Zoo's entrances. Police on night shifts monitor intrusion alarms and closed-circuit television screens in the Zoo's Police Station. Patrols inspect the grounds and animals, communicating periodically by radio with the Station.

"We're mainly checking for possible fires, sick animals or unlocked buildings," said patrolman Owen Thompson, who spotted a fire on the Bird House hill one night last December. The blaze had started spontaneously in hay delivered that day. Quick response by Zoo Police and firemen prevented the fire from reaching any animals.

Dogs wandering into the Park at night can also be a problem. "Even the smell of a poodle irritates a lot of animals," said Pvt. Clyde Saunders, who is negotiating with a publisher for rights to a novel he wrote, with the help of Zoo ex-

perts, about an escaped polar bear.

Although Saunders' novel is pure fiction, Zoo Police are always aware of the possibility of an animal escape. However, Lt. Bob Ruffin can recall only three incidents of animals getting loose during his 14 years on the Force, and none of those animals left the Park.

Except for pre-dawn hooting gibbons and trumpeting elephants, the animals are quiet most of the night. In fact, some of them get downright irritable if their sleep is disturbed. Ask Owen Thompson:

"One night I found an unlocked door at the Ape House. When I went inside, the big silverback ape sprang out and pounded the glass like he was going to break through. Of course he couldn't. That glass is at least two inches thick. But I was scared to death. I guess I woke him up."

At 5:30 a.m. the night officers open the Zoo's gates, and the Police prepare for another busy day.

"The size and shape of the Park make it extremely difficult to patrol," said Day, "so we divide the grounds into six patrol beats, with an officer normally assigned to each area." Additional patrol by motorscooter officers allows the

Zoo Police to respond quickly in an emergency.

One of the Zoo's most serious emergencies occurred eight years ago, when heavy rains flooded the lower end of the Park.

"The water ran over in Rock Creek," Ruffin said. "It was eight feet deep in the shop area and flooded all the engines and boilers."

Zoo vehicles and a FONZ trackless train washed down the creek. "We had a police car, almost brand new; it was completely destroyed by the flood," Ruffin said. "We worked all night to make sure the animals were safe. It wasn't hard to handle them; they didn't panic, but they were a little frightened. We didn't lose any, and that was something."

While such emergencies are rare, Zoo Police are trained and equipped to handle all types of police work, and they maintain a close professional relationship with other local law enforcement agencies, especially the U.S. Park Police and Metropolitan Police Department.

"We are essentially service oriented," said Day, "but the prevention of crime and protection of life and property continue to be our primary function." □



Tom Sullivan

Pvt. Clyde Saunders monitors the Zoo's closed-circuit television screens.





# FONZ Photo Contest

*Color photo winners: Sea Lion Exhibit (second place, Glen McEwen); orangutan mother and child (third place, Eileen King); serval cat (honorable mention, Anne Gravely); orangutan in doorway (first place, Cynthia Frank).*









## Contest Winners

Cynthia Frank of Silver Spring, Md. (for a color photo of an orangutan), and Theodore Beahm of Washington, D.C. (for a black-and-white photo of a leopard), won top honors in FONZ's Seventh Annual Photo Contest.

Second place winners are Glen McEwen of Gaithersburg, Md., and Jane McCarthy of Ithaca, N.Y. Eileen King of Stamford, Conn., and Jack Wright of Richmond, Va., won third place.

There were so many excellent photographs submitted that judges awarded 17 honorable mentions. In the color category, honorable mention winners are: Christine Bearse, Patrick Crumlish, Walt Eilers, Anne Gravely (two honorable mention awards), Gary Jacob, Eileen King, Jessica Lee, Robert Miller, James Nelon, Daniel Sands, Dorothy Waggoner, Becky Willard, and Marjorie Wilson. Jacob Gair and Kip Kelly won two honorable mention awards each for black-and-white photographs.

The next FONZ Photo Contest will be judged in early 1985.



*Black-and-white photo winners, clockwise from top: leopard (first place, Theodore Beahm); children watching orangutans (second place, Jane McCarthy); Surinam toad standing (third place, Jack Wright).*





# Bluebirds *(Continued from page 9)*

To discourage climbing predators, most boxes were put on tall, narrow aluminum poles. As an extra measure against raccoons (the worst predators at the Center), the poles were coated with all-purpose grease and red pepper.

The narrow pole and grease-and-pepper combination proved effective. Coil marks in the grease near the bottoms of some poles indicated that large snakes tried unsuccessfully to climb the poles. Raccoons had less difficulty climbing the poles (as evidenced by grease smears on some of the boxes), but they apparently found the pepper so noxious that they did not persist in trying to rob nests.

Though fewer pairs of bluebirds used the nestboxes in 1977 than in 1976, the number of young bluebirds that fledged that year was more than twice the number that fledged the year before.

To increase the number of nesting bluebirds, 20 boxes were added in 1979. The results were remarkable. The number of pairs nesting in the boxes increased from 18 to 27; the number of eggs laid and nestlings that fledged almost doubled.

Last year, 37 pairs of bluebirds nested at Front Royal. They produced a record 292 eggs. Unfortunately, only half the eggs produced fledglings. Several pairs of birds were thwarted by predators that are virtually impossible to deter—bears!

Another Zoo research project examined anti-predator behaviors of nesting bluebirds. This study found the birds were much more aggressive toward snakes, which cannot pursue them, than toward owls or hawks.

To study the return rates and

## Front Royal's bluebirds were much more aggressive toward snakes, which cannot pursue them, than toward owls or hawks.

In addition to being a successful conservation project, the Zoo's bluebird trail has provided excellent opportunities for research on bluebirds. Under Morton's direction, FONZ-supported student interns observed the post-fledgling activities of juvenile bluebirds in 1976 and 1977 to learn more about an unusual behavior called "helping": Bluebirds have two or three broods of young each breeding season, and the young of first broods occasionally help in the feeding of the young of their parents' second or third broods.

distribution patterns of young bluebirds, the FONZ interns banded nestlings hatched from 1976 through 1979 and identified individual adult bluebirds from their unique color bands.

This spring, Morton added 26 boxes to the Zoo's bluebird trail, and he hopes to find one or more graduate students to conduct research on Front Royal's thriving bluebird population.

The Zoo's success offers further proof that protected nextboxes in suitable habitat are the key to bluebird survival. The fates of the whooping crane, bald eagle and California condor may be in the hands of policymakers and experts; but the future of the eastern bluebird is in the hands of the public.

If enough people erect and monitor nestboxes throughout the bluebird's breeding range, further declines in the population may be averted. Bluebirds could once again "herald spring's arrival" in relative abundance. □

*Eugenia Snyder spent four years as an NZP research zoologist working on the Front Royal bluebird project.*

Breeding Activities of Bluebirds Nesting in Front Royal

	1976	1977	1978	1979	1980*	1983
Number of						
boxes available	35	61	65	85	85†	60
breeding pairs	19	17	18	27	31	37
eggs laid	126	173	137	272	144	292
nestlings	97	143	129	242	123	210
fledglings	59	123	109	209	109	163
Percent of						
eggs producing fledglings	46.8	71.1	79.6	76.8	75.7	55.8
nestlings producing fledglings	60.8	86.0	84.5	86.4	88.6	77.6

\*Data for first broods only.  
†Most, but not all boxes were monitored.



# Cavity Nesters

Nesting periods, broods and nest materials of birds in the Maryland-Virginia area that are likely to use nestboxes in bluebird habitat:



EASTERN BLUEBIRD

**Eastern Bluebird** (6½-7½") nests March-July; produces 2-3 broods of 3-7 pale blue (rarely pinkish-white) eggs; nest usually made of dried grass lined with finer grass; sometimes uses pine needles, weed stems, fine twigs lined with hair, feathers.

**House/English Sparrow** (5½-6¼") usually nests April-September, though eggs have been reported year-around; produces 2-3 broods of 3-7 white, pale blue or pale green eggs spotted with grey or brown; loosely-constructed nest made with a base of twigs stuffed with grass, straw, chicken feathers, cotton, string.

**Tree Swallow** (5-6½") nests April-June; produces 1 brood of 4-6 white eggs; nest made of dried grass, straw lined with chicken feathers.

**House Wren** (4½-5½") nests April-July; produces 2-3 broods of 5-9 white eggs with brown speckles; nest made of sticks, twigs lined with feathers, hair, wool, spiders' cocoons, catkins.

**Carolina Chickadee** (4¼-4½") nests March-May; produces 1 brood of 3-8 white eggs dotted with browns; nest made of moss, bark strips, grass, down of ferns, feathers; cup padded with milkweed down, thistle down, hair.

**Tufted Titmouse** (6-6½") nests March-May; produces 1-2 broods of 5-8 white or cream eggs speckled with browns; nest made of wool, moss, cotton, leaves, fibrous bark, hair, shed snake-skin.

**Carolina Wren** (5½-6") nests April-July; produces 2 broods of 4-8 white or pale pink eggs spotted with browns; nest made of grass, weed stalks, inner bark, leaves, moss, rootlets, feathers, shed snakeskin.

**Bewick's Wren** (5-5½") nests March-June; produces 1 brood of 4-11 white eggs irregularly spotted with browns, purples, lavender, gray; feather-lined nest made of green moss, sticks, dead leaves, cotton, hair, wool, shed snake-skin.

**White-breasted Nuthatch** (5½-6") nests April-June; produces 1 brood of 5-9 white eggs speckled with bright reddish brown or pale lavender; nest made of bark strips, dried earth pellets, small twigs, grass, rootlets, fur.



HOUSE/ENGLISH SPARROW



HOUSE WREN



CAROLINA CHICKADEE



CAROLINA WREN



BEWECK'S WREN



TREE SWALLOW



TUFTED TITMOUSE



WHITE-BREASTED NUTHATCH



# FONZ News

## TAKE AN AFRICAN SAFARI RIGHT AT YOUR ZOO!

Blazing torches illumine giraffes and elephants. As tribal drums echo, costumed dancers wearing spectacular animal masks parade behind 15-foot stilt dancers. A lion's roar pierces the night air.

A scene from remotest Africa? No, it will all be happening right here at the National Zoo on the evening of May 17. And you're invited to attend FONZ's first benefit extravaganza to launch the Theodore H. Reed Animal Acquisition Fund honoring the long-time (1958-83) Zoo Director.

The National ZooFari will be an informal gala with special animal demonstrations, authentic tribal performances by the acclaimed African Heritage Dancers and Drummers, a gourmet supper, and orchestra music for dancing.

Co-chairpersons will be Washington Mayor Marion S. Barry, Jr.; Maryland Governor Harry R. Hughes; Smithsonian Secretary S. Dillon Ripley; and Mrs. Charles S. Robb, wife of the Virginia Governor. The Honorary Committee includes author-conservationist Gerald M. Durrell, National Geographic President Gilbert M. Grosvenor, Mrs. Raymond R. Guest, Jr., WMAL's Harden and Weaver, John W. Hechinger, Marlin Perkins, ornithologist Roger Tory Peterson, NBC's Willard Scott and Jim Vance, actor Jimmy Stewart and

World Wildlife/US President Russell E. Train.

As a special National ZooFari door prize, one guest will win two round trip tickets on World Airways, ultra-class service, to any of the following destinations: Honolulu, Los Angeles, San Francisco, Kansas City, New York, London or Frankfurt.

The evening will begin at 6 p.m. with cocktails, African entertainment, and animal events such as elephant demonstrations and late feeding of the pandas, who will be exploring the brand-new outdoor exercise furniture built by FONZ workers four days earlier (see "Panda Playground," page 21). Then follows a gourmet picnic supper and dancing beneath a

giant tent next to the Elephant House. The entire Zoo will be open to enjoy your favorite animals and exhibits. Tickets to the benefit gala are \$100 a person (\$60 tax deductible per ticket). If you can't come, please consider a donation toward this important conservation effort.

Proceeds from the first of what is expected to be an annual event will enable the National Zoo to acquire and breed exotic and often endangered animals. Representative species being considered for acquisition include Asiatic elephants and rhinos, musk deer and zebra duikers. Fund support will also improve the chances of obtaining from the People's Republic of China such rare and little-



*Retired Zoo Director Reed and friends.*



known species as golden monkeys and gorals, which are not currently in America.

According to the Zoo's Acting Director, Dr. Christen M. Wemmer, costs of acquiring certain species have increased tremendously.

"To begin with, once a species is proposed for acquisition, its wild population must be evaluated, and only as a part of a defined species management program will wild-caught animals be brought into the collection," Wemmer said. "This alone involves extensive research and consultation in order to adhere to all local, national and international conservation goals."

By participating in the National ZooFari, FONZ members will be launching a conservation program that will help assure the National Zoo's world leadership role in the study, breeding, and saving of threatened wildlife.

If you would like to receive a personal invitation to the National ZooFari, please call FONZ at 673-4950 or write to FONZ, c/o National Zoo, Washington, D.C. 20008.

---

## FONZ TOURS

---

### Wildlife of Nepal

*Feb. 22-Mar. 16, 1985*

Join FONZ on this one-of-a-kind tour to the Kingdom of Nepal and see an internationally acclaimed wildlife conservation program in action. On this unique trip you will have the opportunity to meet Nepal's leading conservationists and wildlife experts and to see the research legacy of the Smithsonian-Nepal Tiger Ecology Project.

Nepal's diverse culture and wildlife heritage will be experienced on the scenic three-day "Prince Charles Trek" with its spectacular Himalayan panorama and on a scenic raft trip down the glacier-fed

Narayani River to the lowland jungles of the Terai. There, at Royal Chitawan National Park, you will meet the Smithsonian field team, see special demonstrations of the work in progress and radio-track a tiger or leopard, from elephant-back. There will also be a reception by the Ambassador of the United States and a special evening engagement with a member of the royal family.

The cost for this unique wildlife adventure is approximately \$5200 per person, based on double occupancy, and includes a \$1,000 tax-deductible contribution to the Mahendra Wildlife Trust for its critical conservation work in Royal Chitawan Park.

### China's Panda Reserves

*Sept. 19-Oct. 8, 1984*

FONZ is proud to offer its members this chance of a lifetime to be among the first groups of foreign visitors allowed to tour some of the most beautiful and fascinating private wildlife reserves in China. Only a limited number of visitors will have the opportunity to participate in this extraordinary adventure, as this region is not officially opened to tourists.

This special tour will include visits to three private panda reserves in the Sichuan Province—known to hold the world's largest panda population. While seeing the giant panda in the wild is rare—considering that there are fewer than 1,000 remaining—you will be able to tour the research facilities of the Panda Preservation Project and see their giant pandas in captivity.

The cost for this unique wildlife adventure is approximately \$4500 per person, based on double occupancy, and includes a \$200 tax-deductible contribution to the Panda Preservation Project.

### Iceland/Greenland

*July 28-Aug. 14, 1984*

Join the FONZ safari to the "Land of the Midnight Sun." This 18-day tour promises daily show-stoppers: geysers, glaciers, fjords, lava fields, hot springs, volcanoes, a remote Eskimo village, ancient Viking ruins, and abundant arctic birdlife.

The tour price of \$2686 per person is all-inclusive, except for a few meals in Iceland, and also includes a \$200 tax-deductible contribution to FONZ.

All tour prices include a FONZ or National Zoo escort, professional local guides throughout, all tips, flight bag, and most other costs. For detailed itineraries and reservation forms, call the FONZ Membership Office at 673-4960.

---

## HELP A FUTURE JANE GOODALL

---

Each summer FONZ brings college students to the National Zoo as interns. The students assist Zoo scientists in animal research projects as they learn about the Zoo and develop skills that will be useful to them later in their careers.

If you have a room in your house that will be empty this summer or if you need a housesitter, why not help a future Marlin Perkins or Jane Goodall stay within his or her means while learning about wild animals?

FONZ summer interns will need housing near the Zoo or near public transportation for twelve weeks from late May to early September.

These interns are a very select group of dedicated individuals. They are some of the brightest and best of future zoo professionals. Won't you help?

For additional information, please call Mary Sawyer Hollander at 673-4955.



# Gustav

Photographs by  
Jessie Cohen

The National Zoo's renovated Monkey House opened December 19 with a bright new look that includes fresh wall surfaces, stainless steel doors and new window mullions.

Next time you visit the Monkey House, be sure to look for Gustav, the Zoo's adult male liontail macaque.

Native to the tropical rain forests of the Western Ghats Mountains in southern India, the liontail macaque is the most seriously endangered of the 19 species of macaques—and one of the most critically endangered mammals in the world. An estimated 800 liontails live in the wild; another 300 live in captivity.

The major threat to liontail macaques is the loss of habitat through clearing of forests for agriculture. In addition, according to mammalogist Ernest Walker, "The species seems to have a low reproductive rate and to be unable to adapt to human encroachment."

Gustav, however, adapts quite well to "encroachment" by his keeper Diane De Graffenreid (*below right*). He also seems to enjoy seeing certain frequent visitors whom he has come to recognize—usually women visitors.

But Gustav does not always look dignified or friendly. Sometimes he can look quite ferocious (*overleaf*).

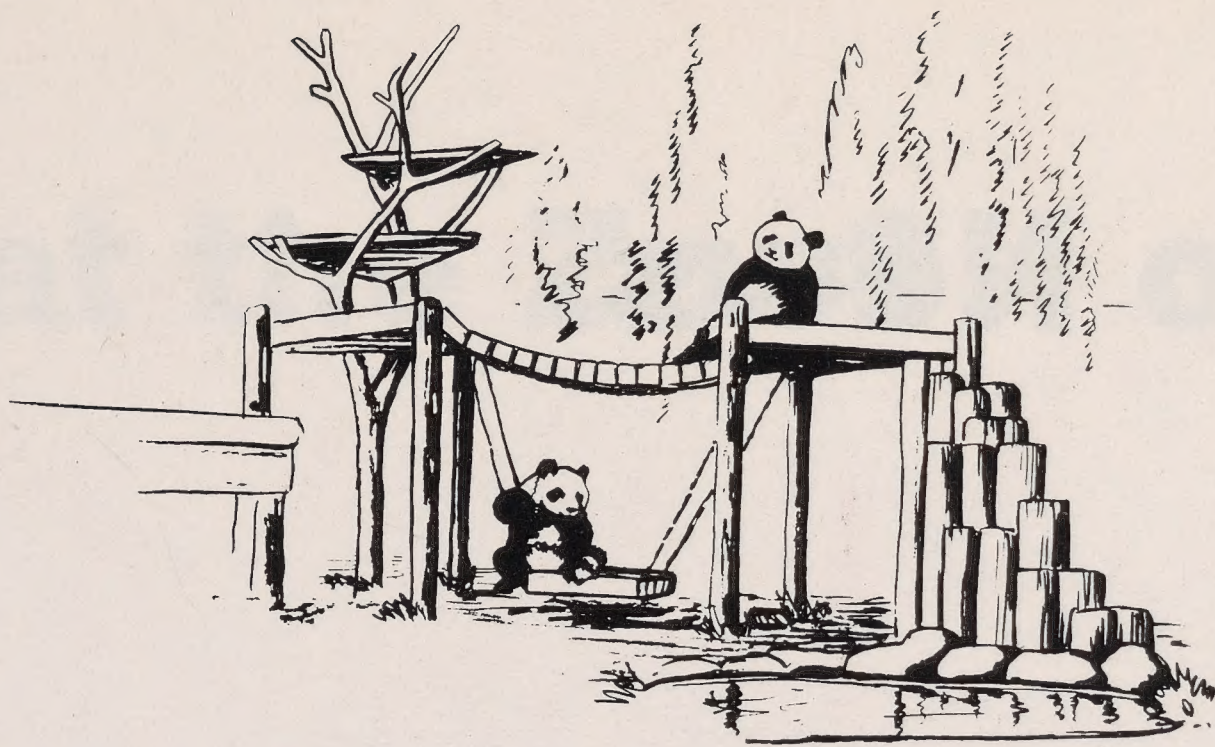








# Panda Playground



Warren Cutler

From May 10 through 13, over 300 FONZ members will gather daily at the outdoor giant panda yard to build new furniture for Hsing-Hsing and Ling-Ling.

The effort is FONZ's biggest volunteer project ever. Three shifts of volunteers will work on the four-day project—from 8 a.m. to noon, from noon to 5 p.m. and from 5 p.m. until dark.

The new panda furniture is designed by playground architect Robert Leathers of Ithaca, N.Y. Leathers, who will supervise all shifts, has coordinated the construction of playgrounds around the country using volunteer labor and donated materials. This will be his first playground for four-legged animals.

Zoo and FONZ staff are very excited about redoing the panda yards. For the last few years, there has been discussion about replacing the crumbling wooden platforms that provide the only diversion in the yards. The existing area offers a large open space but does not provide much to provoke activity from the animals. The keepers have tried to improvise by hanging tire swings and leaving barrels in the yards. Both Hsing-Hsing and Ling-Ling play with anything new.

The new design will give the pandas many options. Several low "trees" will allow the pandas to climb and rest in the branches. Platforms will be placed at different levels for eating or resting. Other features to be built by volunteers include swings, balance beams and a modified trampoline.

Please join us to transform the outdoor yards into a panda playground. There are many ways you can help make the playground a reality. The materials and tools for

construction will all be donated. (A list of needed materials, from trees to nails, is available from the FONZ office.) Volunteers are needed to staff the project's child care program and to serve coffee, snacks, lunch and dinner to project participants.

We need your help in building the furniture. No expertise in building is necessary! There are

many jobs that can be done by the unskilled.

To volunteer for the panda furniture project, or to receive additional information, call 673-4711.

Please join us! It isn't often we get the opportunity to return some of the joy we have gotten from the pandas for the last 12 years. Now it's our turn to brighten their environment. —Elizabeth Frank, NZP

## We Still Need Your Help!

Thank you for your response to our first request for assistance in building panda exercise furniture. BUT, we still *need* your help! In order to make this project a success, your contributions in the following areas are vitally important.

**Volunteers** (all shifts, especially Thursday and Friday; specify shifts below.)

- \_\_\_\_\_ skilled (anyone 18 years or older who can cut a straight line using a hand-held circular saw)
- \_\_\_\_\_ unskilled
- \_\_\_\_\_ childcare (caring for children whose parents are working on construction site)
- \_\_\_\_\_ food (providing and/or serving food for workers). Please specify on what shift you are providing/serving.
- \_\_\_\_\_ on-site registration during construction

### Tools

- \_\_\_\_\_ step ladders (6', 8', and 12' high)
- \_\_\_\_\_ 2 Sawzall
- \_\_\_\_\_ table saw (10" or 12") with new rip blade
- \_\_\_\_\_ use of a step-van for one week

### Monetary Support

- \_\_\_\_\_ to cover the high cost of specialized lumber needed for construction and other items not donated. Make your tax-deductible check payable to FONZ.

	5/10	5/11	5/12	5/13
SHIFT I				
SHIFT II				
SHIFT III				

Name \_\_\_\_\_

Address \_\_\_\_\_

Zip \_\_\_\_\_



# Zoo News

---

## THE ZOO'S NEW DIRECTOR

---

Dr. Michael H. Robinson, the National Zoo's recently appointed Director, will assume his new post in May.

A tropical biologist and animal behavior expert, Robinson has worked at the Smithsonian Tropical Research Institute in Panama for the past 18 years and has been its Deputy Director since 1980.

In a statement to Zoo staffers, Robinson said he is looking for-



Jessie Cohen, N.Z.P. Office of Graphics and Exhibits

*The Zoo's new Director, Dr. Michael Robinson, wearing a FONZ tie.*

ward to working with "a group of people who have created a zoo that is the envy of the world."

Being part of the "varied and complex intellectual institution" of the Smithsonian makes the National Zoo "unique among zoos of the world in its opportunity to contribute to the preservation of diminishing species," Robinson said.

"I am also deeply aware of the National Zoo as a place where millions of visitors come to be entertained and educated."

In pursuing these principles, Robinson expressed a desire to encourage the work that FONZ does. "It's a wonderful asset to the Zoo to have such an enthusiastic body of supporters doing so many fine things," he said.

---

## PANDA BEHAVIOR WATCH

---

On March 19, the Zoo's giant pandas bred. If you happened by their enclosures as Ling-Ling was walking backwards and both animals were bleating, you may have been aware that Ling-Ling was in estrus. You can also be sure that somewhere in the background a FONZ volunteer was recording every bleat, chirp, bark, paw-swat and mount.

The volunteer is part of the Zoo's behavior watch program—one of many Zoo activities in which FONZ members have the opportunity to participate. Behav-

ior watch volunteers provide the Zoo with data it would otherwise not obtain.

The bulk of behavior watch time has been spent in recording the behavior of Hsing-Hsing and Ling-Ling. When the pandas first arrived in April 1972, little was known of their behavior, so initial observations were done by Zoo staff members. In November 1972, FONZ volunteers began gathering data in the spring and fall from 4 p.m. to 7 a.m. These week-long watches continued for several years. During three-hour shifts, FONZ volunteers recorded behavior such as eating, sleeping, walking, playing and scent marking.

Three summers have seen FONZ "preg watchers" sitting in the panda kitchen amid pots of rice steaming on the stove, monitoring Ling's condition on camera. These have been around-the-clock observations and have lasted anywhere from two weeks to two months. Besides completing a checksheet which includes behavior like nest building, preg-watch volunteers have been responsible for operating several cameras and audio equipment, feeding a picture to the television set in the lobby of the Education Building, taping significant behavior and alerting Zoo officials if it looks as if a birth might be imminent.

Last summer, a FONZ volunteer became the first person to record on videotape an actual panda birth.

—Jo Anne Grumm



# What's New at the Zoo?

## Festival of Music and Dance

A six-day celebration of performing arts is planned at the National Zoo June 2 through 5. At the National Zoo Summerfest '84: A Festival of Music and Dance, dozens of groups will perform original and standard works of modern dance, mime, jazz, bluegrass, and classical and folk music. The sounds and sights of wild animals, music and dance set outdoors in pleasant park surroundings should make these June evenings at the Zoo memorable.

Wildlife films, animal training demonstrations and other special activities are also planned. Attendance is free and everyone is invited.

Festival hours are 1:30 p.m.-8:00 p.m., June 2 and 3; 4:30 p.m.-8:00 p.m., June 4 and 5.

## Animal Update

New animals at the Zoo include:

- Tiina, the first pygmy hippo born at the National Zoo in seven years, arrived February 24. She is on exhibit in the Elephant House.

- Indah, a female orangutan born at the National Zoo August 1980, has returned from the San Diego Zoo, where she was sent for hand rearing. Keepers are gradually introducing her to other oranges in the Ape House.

- A two-toed sloth, born January, is not yet on exhibit. Watch for the young sloth, and in the meantime, visit the adult sloths in the Small Mammal House.

- A spectacled bear cub, born December, can be seen with its mother at the Bear Exhibit.

- Three onagers—one male and two females—were transferred to the Hardy Hoof Yard last October from the Zoo's Front Royal Conservation and Research Center.

- Two pygmy marmosets, a male and female acquired in January, are in the Small Mammal House.

- The new mixed tropical exhibit in the Small Mammal House features golden lion tamarins, two-toed sloths, agoutis and hairy armadillos.

- Red-footed tortoises hatched in December and March are in the Reptile House Demonstration Area.

- A common crowned pigeon, hatched December 1983, is in the Bird House.

## Training Demonstrations

Seal and sea lion training demonstrations can be seen every morning at 11:30 in Beaver Valley. Elephant training demonstrations take place daily at 2 p.m. at the Elephant House.

## Summer Hours

From April 1 through October 15, the Zoo grounds are open daily 8 a.m. to 8 p.m.; buildings are open 10 a.m. to 6 p.m.

Jessie Cohen, NZP Office of Graphics and Exhibits



*The Zoo's newborn two-toed sloth clings to its mother.*





**The National ZooFari will  
feature African stilt dancers  
(P. 17)**

**Friends of the National Zoo  
National Zoological Park  
Washington, D.C. 20008**

*Address Correction Requested*

**Nonprofit Organization  
U.S. Postage  
PAID  
Washington, D.C.  
Permit No. 44282**